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Some studies on enteric parasites of sheep in Beni-Suef Governorate

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This work was carried out in four selected provinces in Beni-Suef Governorate, Egypt to investigate the possibility of existence of different types of enteric parasites infect 2-5 years old sheep and estimate the rate of improvement in some of its productive parameters post eradication of these parasites in relation to each parasitic infection. The study cleared that gasterointestinal bursated nematodes (*Haemonchus* spp., *Trichostrongylus* spp., *Ostertagia* spp., *Nematodirus* spp. and *Cooperia* spp.) and *Fasciola* are the most common parasites infecting sheep (57.44% & 48.44% respectively), this was followed by *Paramphistopmum* infection (38.88%), *Moniezia* spp. (33.11%), different types of *Eimeria* spp. (29%) and finally *Trichuris* spp (7%). Fecal culture of positive samples demonstrate presence of five types of nematode larvae include *Haemonchus* spp. larvae (33.75%), *Oestertagia* spp. (31.5%), *Trichostrongylus* (11.75%), *Cooperia* spp. (14.5%) and *Nematodirus* spp. (8.5%). Using of ivermectin for treatement of GIN, Nitroxynil for treatment of *Fasciola,* and oxyclozanide for treatment of *Paramphistomum* species infection, induce marked decrease in the mean number of different eggs per gram (e.p.g.) of faeces associated with improvement in mean body weight gain (5.71 Kg) and rate of lambing (26.77) after 6 months post treatment. High rate of improvement post treatment was recorded in animals originally free from *Fasciolia* infection, also and that harboring low e.p.g. than animals of high e.p.g. Finally it was evident that high rate of improvement was cleared in animals less than 4 years old in comparison by that over 4 years old.

Sheep is one of the important sources of meat and wool in Egypt. Internal parasites of sheep are serious problems of live stock production leading to a serious loss of meat and wool production. Parasites of great economic importance are those of the gasterointestinal tract and liver, where the parasites penetrate the mucosa and submucosa of the intestine causing deep-seated inflammation which indirectly affects the reproductive performance of the animals (Radostitis *et al*., 1994). Gastrointestinal parasites are very common in sheep due to their grazing and watering habits (Godbole *et al*., 1988). Parasites are considered one of the most common affections, which cause great economic losses (Ammar, 1997).

Infection of sheep by gastrointestinal parasites still constitutes one of the major economic and health problems affecting sheep industries, Loss of blood and plasma protein, alteration in protein metabolism, diarrhea and decrease weight gain are the common abnormalities in infected animals. Others include decreased production, costs for treatment, and prophylaxis as well as animal death (Blood *et al*., 1983; Coop, 1983; Ismail and Hussein, 1988; Moussa *et al.,* 1998; Veneziano, 2004).

Fascioliasis is responsible for marked direct and indirect losses among ruminants in Egypt, including weak production, increased rate of condemned liver, decreased weight gain and productivity and increased susceptibility to different pathogens especially among chronic diseased animals, (Radostitis *et al*., 1994). The reproductive performance of *Fasciola* infected animals is usually impaired causing reduction in growth rate of young animals and prolongation of estrus in mature animals (Kumber and Sharma, 1991). Using of ivomec injection for sheep to provide outstanding internal and external parasite control has been approved (Campbell and Benz, 1984). Using of oxyclozanide and levamizal to sheep, produced about 100 % against *Paramphistomum*

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(Georgiev and Gruev, 1979 and Denev *et al*. 1982). Nitroxynil was effective against fascioliosis (Kendall and Parfitt, 1975).

Also the using of anthelmintics reduced egg counts (e.p.g.) (Ahmed *et al*., 1983 and Talabi, 2002). More over, improvement of weight gain (Rehbein *et al*., 1999), improved fertility rate of ewes (Garcia-Perez *et al*., 2002) and increase milk yield and birth weight of lambs (Fthenakis *et al*., 2005). The weight gain of lambs is highest in ewes given separate anthelmintic treatment for *Fasciola* and nematodes than *that* given one drug for both parasites (Maingi *et al*., 2002).

So the aim of the present study was to identify the internal parasites affect sheep in different locality in Beni-Suef Governorate, their prevalence as well as the rate of improvement of some productive parameters of these animals after 6 months post treatment (for lambing arte) and estimate the relation between type of eradicated parasite and rate of recorded improvement in each case.

Materials and methods

Study sites. The study period extends from March 2004 to February 2005. During this period, a number of 900 ewes' samples were collected from 4 provinces (Beba, El-Fashen, Somosta and Ehnasia) representing the field condition in Beni-Suef Governorate, Egypt.

Parasitological examination. Identified fecal samples were collected from all available sheep in each of the study area, two times per month. After identification of each animal , separate sheet was filled out and included: owner name, locality, age, sex, approximate body weight, date and condition of last parturition, owner's complain and last medication used. The samples were transferred to Parasitology Department Faculty of Veterinary Medicine, Beni-Suef University for examination.

Preparation and examination of fecal samples. *Fasciola* and *Paramphistomum* spp eggs were diagnosed using Fluke finder technique according to (Malone *et al*., 1984), using 2 gram of mixed feces and examination under the microscope in small amount of water in Petri-dish. Concentration flotation technique according to (Soulsby, 1982) was used for diagnosis of other types of enteric parasites as *Eimeria* spp oocysts, using concentrated salt solution and examination to top layer of the preparation under the microscope after addition of cover slide.

Egg counting technique. Egg count was determined by McMaster technique according to Soulsby (1982). In order to estimate the level of infection by small eggs as well as to evaluate the efficacy of the drug post treatment according to the following equation: Efficacy of the drug = a-b/a x100 where a = No. of eggs before treatment, b = No, of eggs post treatment

Diagnosis of lung worms and other larvae. Examination and diagnosis of lung worms and other nematode species was done after cultivation of the fecal sample via modified Baermann technique according to (Burger and Stoye, 1968)

Animal groups and plan of treatment. In order to estimate the effect of parasitic eradication on the rate of improvement of some productive parameters of treated ewes, group from the infected animals was allocated into sub groups according to types of parasitic infection, and level of infection as the following:

Animals infected by *Fasciola* eggs only as (G-1) of low e.p.g. and (G-2) high e.p.g. Animal infected by G.I.N. only as (G-3) low e.p.g. and (G-4) high e.p.g. Animals infected by different parasites which could be differentiated into animal infected by *Fasciola* and G.I.N. (G-5) and animal infected by mixture of parasites (G-6). Infected non-treated control ewes (G-7) include sub-groups represent each of the previous conditions (7-1 to 7-6) as in (Table 6). Non-infected non-treated (Healthy control ewe) (G-8). Parasitic infection status and the mean body weight and lambing rate of these animals were re evaluated directly before administration of drug treatment. At the end of 6 months post treatment of these animals, different degrees of improvement was recorded via re-estimation of the previous parameters.

Drug treatment. Three drugs were used for treatment of the infected cases directly after their diagnosis: 1- For treatment of gastro-intestinal nematodal infection. Ivermectine injection at a dose of 1ml/50 Kg Bwt. 2- For treatment of *Fasciola* infection: Nitroxynil injection will be applied at a dose of 1 ml / 25 Kg. Bwt. subcutaneous injection. 3- For treatment of *Paramphistomum* infection: Oxyclozanide (Za-nil, 4ml/10 kg. body weight) oral suspension. Regular samples at weekly intervals were collected to evaluate the efficacy of the treatment till one month post treatment. Evaluation of general improvement was estimated at the end of 6 months post treatment

Results

Incidence distribution of different enteric parasites in examined ewes was illustrated in

Table (1) where it was cleared that, the predominant one of infection by G.I.N. were 57.44%, followed by *Fasciola* infection (48.44%) , then by *Paramphistomum* spp. (38.88%) *Moniezia* spp (33.11%) *Eimeria* spp. (29.0%) and the lowest percentage were recorded for Trichurius spp infection (7.0%). The high prevalence of all parasites except *Fasciola* spp. was recorded in Beba locality. El-Fashn ewes were highly infected by *Fasciola*. At the same time, Somosta and Ehnasia showed lower in the common rate of infection by parasites than the two other localities.

Concerning, different types of G.I.N. recorded in infected samples, data in Table (2) demonstrate presence of 5 types of nematode larvae in closely related distribution between the different study sites. The most common one is *Haemonchus* spp larvae (33.75%), followed by *Oestertagia* spp (31.5%), then *Trichostrongylus* (11.75%), *Cooperia* spp. (14.5%) and the lowest one was *Nematodirus* spp (8.5%) in the whole Governorate.

The data in Table (3) demonstrate the parasitic and production rates of the selected groups of ewes before treatment. The changes in the previous mentioned parameters (Table 3) after 6 months post treatment were explained in Table (4). The data in this table demonstrated that there was marked improvement recorded in each group of ewes. Complete freedom from parasitic eggs was noticed in animals that originally had low eggs per gram of feaces than that of high eggs per gram. At the same time, the improvement in weight gain was also higher in such groups especially in animals of young ages than that of old ones.

Animals with previous *Fasciola* infection showed lower weight gain (6.1 Kg & 5.0 Kg / month) in comparison with that originally infected by G.I.N. only (7.0Kg & 6.3Kg /month) in (low and high e.p.g. infected animals respectively). Less improvement response post treatment was recorded in animals of mixed infection. (Weight gain was 4.5 kg / month).

The profile recorded in weight gain appeared clear also on estimation to the improvement in rate of lambing, The increase in lambing rate post treatment of G.I.N. infection reached to (30% and 29%) in low & high e.p.g. groups, and to (26.6% and 25.0%) in case of previous *Fasciola* infected animals after 6 months post treatment.

As in case of weight gain, the lowest rate of improvement in rate of lambing was recorded in animals infected by more than one type of parasite (23.44%).

These data become more significant in comparing the condition of each animal before and post treatment (Table 4) as well as comparing them with the data of control infected non-treated and healthy control groups demonstrated during the same period (Table 5).

Discussion

The parasitic infection particularly in Egypt represents an important cause of direct and indirect losses in farm animals. The direct losses include not only the actual mortalities but also severe degree of morbidity resulting in decrease in weight and production. The indirect, damages are not easily evaluated as the infection runs usually in subclinical long standing course including retardation in growth with loss of body weight (Radostitis *et al*., 1994).

The infection rate by *Fasciola* was (48.44%), is similar to results obtained by Morsy *et al*. (2005) in Al Fayoum in sheep (40 %) and treated the infected sheep by Mirazid which showed no egg at post treatment examination. Also the present results differ with El Sayed (1997) who reported the rate of infection by *Fasciola* (6.4%) in Dakahlia Province. This variation might be related to the application of specific drugs as prophylaxis control programs within regular intervals in some Egyptian province.

Concerning gastrointestinal nematodes, the infection rate (57.44 %) with in the range of result obtained by Shawkat *et al*. (1991) who recorded infection rate by PGI in Egypt (65.83%), El Sayed (1997) at rate of 46.4%. But these results differ with Ammar (1997) at Kafr El-Sheikh (39.1%) and Torina *et al*. (2004) who found rate of 78 % in Sicily, Italy. Ivomec, as drug for treatment of gastrointestinal nematodes was found to be effective and eggs disappeared at 1st week post-treatment and the body gain was increase after one moth. This result agrees with Campbell and Benz, (1984).

For *Monizia* spp., (33.11%), it differs with Fakae, (1990) who recorded it at (6 %) in Nigeria and El-Sayed, (1997) at 2.4 %. *Trichuris* spp. infection rate was (7.0 %) and disagree with Fakae, (1990) who found it at rate of (3.5 %) and Mottelib *et al*. (1992), who recorded rate of (13 %) in Saudi Arabia and with El-Sayed (1997) 4.8 %.

Concerning the rate of *Paraphistomum* species infection (38.88 %) the result differ with, Fakae (1990) who recorded rate of (0.9 %) and

Table (1): Distribution of different enteric parasites in the examined sheep in different provinces of Beni-Suef Governorate .

Examined localities	No. examined	Different parasites diagnosed in fecal examination											
		Fasciola eggs		G.I.N. eggs		*Moniezia* eggs		*Trichuris* eggs		*Paramphistomum* eggs		*Coccidia* oocysts	
		No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Beba	250	130	52	166	66.4	95	47.5	38	15.2	105	42	100	40
El-Fashn	250	150	60	160	64	80	32	25	10.0	95	38	66	26.4
Somosta	200	88	44	91	45.5	42	21	-	0.0	80	40	54	27
Ehnasia	200	68	34	100	50	81	40.5	-	0.0	70	35	41	20.5
Mean	900	436	48.44	517	57.44	298	33.11	63	7.0	350	38.88	261	29

Table (2): Different types of nematode larvae detected in the cultivated fecal samples collected from localities.

Season	Mean % of the deferent larvae in 100 counted larva				
	Trichostrongylus spp	*Ostertagia* spp.	*Haemonchus* spp.	*Cooperia* spp.	*Nematodirus* spp.
Beba	13	31	29	18	9
El-Fashn	11	29	38	14	8
Somosta	13	34	33	11	9
Ehnasia	10	32	35	15	8
Mean	11.75	31.5	33.75	14.5	8.5

Table (3): Parasitic infection and production parameters in animals selected for strategic treatment two times / year (April and August).

Type of infection	Animal group	No. of animals/ group	Type of parasite present	No. of e.p.g. Min-Max	Mean e.p.g./ group	Mean bwt (kg) /Mo.	Lambing conditions /6 Mo. rate	%
Animal infected by *Fasciola* Only	**G-1**(ewes of 2-3 years)	15	*Fasciola*	1- 3	1.5	26.2	6/15	40.0 %
	G-2 (ewes over 4 years)	20	*Fasciola*	1-6	2.7	31.4	7/20	35.0 %
Animal infected by G.I.N. only	**G-3** (Low e.p.g)	20	*G.I.N.*	1000-3000	2250	29.5	10/20	50.0%
	G-4 (High e.p.g.)	20	*G.I.N.*	<3000	3650	24.6	8/20	40.0%
Animal infected by different parasites together	**G-5** (animals of 2-5 years old)	15	*Fasciola* *G.I.N.*	1-5 1000-3000	1.75 2500	37.9	5/15	33.3%
	G-6 (animals of 2-5 years old) (30 animal)	9	*Fasciola*	1-3	1.5	31.8	11/30	36.66 %
		15	*G.I.N.*	1000-4000	2200			
		6	*Moniezia,*	100-500	330			
		6	*Paramphistomum*	1-5	2.2			
		7	*Trichurius*	100-300	200			
		14	*Coccidia*	1000-3000	2325			
Total		120				30.25		39.16

e.p.g. = eggs / gram feces

Table (4): Mean improvement in parasitic infection and production parameters at the end of the year in animals treated in April & August at the end of the treatment year.

Type of infection	Animal group	No. of treated animals / group	Original parasite present	Still +ve Animals		Mean bwt. (kg) / Mo.			% of Lambing conditions / 6 Mo.		
				No.	%	Before treat.	Post treat.	Weight gain.	Before treat.	Post treat	Rate of improve
Animal infected by *Fasciola* only	G-1	15	*Fasciola*	0	0.0	26.2	32.3	6.1	40.0 %	66.6%	26.6%
	G-2	20	*Fasciola*	3	15.0	31.4	36.4	5.0	35.0 %	60.0%	25.0%
Animal infected by G.I.N. only	G-3	20	*G.I.N.*	2	10.0	29.5	36.5	7.0	50.0%	80.0%	30.0%
	G-4	20	*G.I.N.*	3	15.0	24.6	30.9	6.3	40.0%	69.0%	29.0%
Animal infected by different parasites together	G-5	15	*Fasciola*	1	6.66	37.9	42.4	4.5	33.3%	60.0	26.7%
			G.I.N.	0	0.0						
	G-6 (30 ewes)	9	*Fasciola*	2	22.2	31.8	37.3	4.5	36.66	60.0%	23.44%
		15	*G.I.N.*	2	13.3						
		6	*Moniezia,*	4	66.6						
		6	*Paramphistomum*	2	33.3						
		7	*Trichurius*	0	0.0						
		14	*Coccidia*	0	0.0						
Total		120				30.25	35.96	5.71 kg	39.16	65.93	26.77%

e.p.g. = eggs / gram feces

Table (5): Mean change in parasitic infection and production parameters at the end of the year in control negative animal and control infected non treated animals at the end of the observation year (group D).

Type of infection	Animal group	No. of treated animals / group	Original parasite present	Changes in mean Number of e.p.g.		Mean body weight (kg) / Mo.			% of Lambing conditions / 6 Mo.	
				At the Beginning	At the end	At the Beginning	At the end	Weight gain.	At the Beginning	At the end
Animal infected by *Fasciola* Only	G-(7-1)	10	Fasciola	2.1	2.5	27.5	30.8	3.3	50.0 %	50.0 %
	G-(7-2)	10	Fasciola	2.3	2.6	33.3	36.5	3.2	50.0 %	40.0 %
Animal infected by G.I.N. only	G-(7-3)	10	G.I.N.	2100	3200	28.5	32.5	4.0	50.0 %	50.0 %
	G-(7-4)	10	G.I.N.	3800	4100	33.9	37.4	3.5	40.0 %	40.0 %
	G-(7-5)	10	Fasciola G.I.N.	1.9 2300	1.9 2800	34.6	37.4	2.8	40.0%	40.0%
Animal infected by different parasites together	G-(7-6) (10 ewes)	7	Fasciola	2.2	2.6	33.3	36.2	2.9	50.0 %	50.0 %
		6	G.I.N.	2000	2800					
		5	Moniezia,	240	250					
		5	Paramphistomum	2.0	2.2					
		3	Trichurius	200	400					
		4	Coccidia	1750	1800					
Mean		60				31.9	35.1	3.3	46.7 %	45.0 %
Control non infected animals (G-8)		**(20) ewes of 2-5 years old**		free		40.5 Kg	50.8	10.3 kg	90.0 %	

e.p.g. = eggs / gram feces

El-Sayed (1997) who recorded rate of 11.2 % in Dakahlia Province.

The decline of e.p.g. after treatment that accompanied with an increase in the body gain after treatment was agree with the finding of Ibrahim *et al*. (1986) in Egypt, in which they noticed that treated animals showed low e.p.g and the mean live weight gain was better than the untreated group of sheep which showed high e.p.g and lower live weight gain. Also the results were similar to that obtained by Hassan and Degheidy, (1986) who mentioned that the untreated sheep infected by *Nematodirus* spp. showed decline in body weight after one month from infection.

The improvement in rate of lambing in treated group was recorded than in control non treated one, where Stromberg *et al*. (1997), who said that the reproductive performance and pregnancy rate improved in, treated groups of animals than control untreated one. Also the result go parallel to Yadav, (1997) who found a significant improvement in the birth rate of pregnant ewes after treatment. Samigullin, (1986) noticed that GIN had a negative effect on the digestion and utilization of protein, fat and cellulose which lead to metabolic disorders, increased food consumption and thus causing economic losses either through production or reproduction, but when he treated the infected lambs, the digestion and absorption of nutrients improved 20 days after treatment.

The young animals showed better results than older ones, this may be due to incomplete freedom of these animals from different kinds of parasites in their body or may be due to that they were old in age.

The study cleared that infected animals by parasite other than *Fasciola* perform good rate of improvement post treatment than that originally has *Fasciola* infection. This may be due to types of organs destroyed by the parasites (i.e., the degeneration as a result of *Fasciola* infection in liver considered as irreversible, in comparison to that recorded as a result of G.I.N. infection in intestine).

In conclusion, high rate of improvement as a result of treatment was achieved in animals infected by G.I.N. than that infected by *Fasciola*. Also, improvement is high in animals of low e.p.g. than that of high e.p.g (one month). At the end of 6 months post first drug administration (for lambing). Therefore care must be taken to the type, level of infection and age of the animal in the production farms in order to estimate the rate of improvement post drug administration, in these farms.

References

Ahmed, I.; Shafique, M. and Ahmed, A. (1983): Comparative efficacy of oxyclozanide, nitroxynil and hexachlorophene against fascioliasis in sheep. Pak. Vet. J., 3 (1): 37-38.

Ammar, K. M. (1997): Epidemiological studies on nematodes, trematodes and cestodes in ruminants in Kafr El-Sheikh Governorate. 4th Scientific Congress, Egyptian Society for cattle diseases, 7-9 Dec., Assuit, Egypt, (1): 81-88.

Blood, D. C.; Radostitis, O. M. and Henderson, J. A. (1983): Veterinary medicine. 6th ed. Bailliere, Tindall and Cox, London.

Burger, H. and Stoye, M. (1968): Parasitologisohe Diagnostik (Teilil): Eizahlung and larven differenzierung. Therapogen Praxisdienst, 3:1-22.

Campbell , W. C . and Benz, G. W. (1984) .Ivermectin .a review of efficacy and safety. J. Vet. Pharmacol. Ther,, 7: 1-16.

Coop, R. L. (1983): The influence of chronic subclinical infection of *Trichostrongylus colubriformis* on gastrointestinal motility and digesta in sheep. J. Parasitol., 91: 381-396.

Denev, I.; **Kostov, R**.; **Vasilev, I.; Gruev, A. and Tonchev, T. (1982):** Study of the therapeutic efficacy of Nilsan preparation against *Paramphistomatidae* and nematode infections in sheep. Vet. Med. Nauki., 19 (4): 83-89.

El-Sayed, H. (1997): Helminth parasites of sheep in Dakahlia Province-Egypt. Assuit Vet. Med. J., 38 (75): 48-54.

Fakae, B. B. (1990): The epidemiology of helminthosis in small ruminants under the traditional husbandry system in eastern Nigeria. Vet. Rec. Commun., 14 (5): 381-391.

Fthenakis, G. C.; Papadopoulos, E. and Himonas, C. (2005): Effects of three anthelmintics regimes on milk yield of ewes and growth of the lambs. J. Vet. Med. Physiol. Pathol. Clin. Med., 52 (2): 78-82.

Garcia-Perez, A.L.; Hurtado, A.; Oresui, L. M. and Juste, R. A. (2002): Effects of a second annual strategic anthelmintic treatment in dairy sheep in Northern Spain. Smal. Rum. Res., 43 (2): 121-126.

Georgiev, B. and **Gruev, A**. (1979): Effectiveness of levamisole and oxyclozanide in paramphistomiasis in sheep and cattle. Vet. Med. Nauki., 16 (3): 45-51.

Godbole, A. D.; Mulay, B. A. and Kulkarni, D. H. (1988): Field trial to study the efficacy of six different anthelmintics on gastrointestinal nematodes in sheep. Ind. Vet. J., (65): 161-163.

Hassan, S.G. and Degheidy, N. S. (1986): Some aspects of productive and reproductive performance in Berki sheep with respect to *Nematodirus* infection. Egypt. J. Vet. Sci., 23 (2): 175-182.

Ibrahim, M. S.; Omran, H.; Balkemy, F. A.; Mohamed, A. R. and Rae, D. G. (1986): Oxfenbendazole for the control of nematode infestations in Egyptian sheep. Trop. Anim. Health Product., 18 (1): 53-54.

Ismail, M. and Hussein, F. M. (1988) : Studies on the relationship between trace elements and some blood components and fertility in Egyptian buffaloes. Alex. J. Vet. Sci., 4 (1): 555-563.

Kendall, S. B. and Parfitt, J. W. (1975): Chemotherapy of infection with *Fasciola hepatica* in cattle. Vet. Rec., 97 (1): 9-12.

Kumber, S. and Sharma, M. G. (1991): Infertility in rural cows in relation to fascioliasis. Ind. J. Anim. Sci., 61 (8): 838-840.

Maingi, N.; Otieno, R. O.; Wed, E. H. and Gichohi, V. M. (2002): Effect of three anthelmintic treatment regimes against *Fasciola* and nematodes on the performance of ewe and lambs on pasture in the highlands of Kenya. Vet. Res. Commun., 26 (7): 543-552.

Malone, J. B.; Ramsey, R. T. and Loyacan, A. F. (1984): Efficacy of clorsulon for the treatment of mature naturally acquired and 8-weeks-old experimentally induced *Fasciola hepatica* infection in cattle. Am. J. Vet. Res., 45 (5): 851-854.

Morsy, T. A.; Salem, H. S.; Haridy, F. M.; Rifaat, M. M.; Abo-Zenadah, N. Y. and Adel El-Kadi, M. (2005): Farm animals' fascioliasis in Ezbet El-Bakly (Tamyia Center) Al-Fayoum Governorate. J. Egypt. Soc. Parasitol., 35 (3): 825-832.

Mottelib, A. A.; Haroun, M.; Magzoub, M. and El-Basheer, E. (1992): The effect of gasterointestinal parasites on blood picture in sheep and goats at Al-Gassim (Saudi Arabia). Assiut Vet. Med. J., 28 (55): 215-224.

Mousa, W. M.; Ezz-El-Din, N. M. and Abdel-Gawad, H. S. (1998): Haematological, biochemical and histopathological changes in experimentally infected sheep with *Haemonchus contortus*. Vet. Med. J. Giza, 46 (4): 479-491.

Radostitis, O. M.; Blood, D. C. and Gay, C. C. (1994): Veterinary medicine, A text book of the diseases of cattle, sheep, pigs, goats and horses. The English language Book Society and Bailliers Tindall. 8th ed. 1223-1268.

Rehbein, S. ; Corba, J. ; Pitt, S .R.; Varady, M. and Langholff, W.K. (1999): Evaluation of the anthelmintic efficacy of an ivermectin controlled-release capsule in lambs under field condition in Europe. Small Rum. Res., 33 (2):123-129.

Samigullin, R. N. (1986): Effect of Trichstrongylus on the digesion and utilization of food by sheep. Veterinaryia, Moscow, USSR. 3: 37-39.

Shawkat, E. M.; Abdel-Halim, M. M.; Kubesy, A. A.; Rakha, G. M. and El-Fauomy, M. M. (1991): Clinical and Therapeutic studies on parasitic gastroenteritis in sheep. Vet. Med. J. Giza, 39 (2): 237-254.

Soulsby, E. J. L. (1982): Helmithes, Arthropodes and protozoa of domestic Animals. 7th ed. The English Language Book society and Baillers. Tindall school.

Stromberg, B. E.; Vatthauer, R. J.; Schlotthauer, J. C.; Myers, G. H.; Haggard, D. L.; King, V. L. and Hanke, H. (1997): Production responses following strategic parasite control in a beef cow/calf herd. Vet. Parasitol., 68 (4): 315-322.

Talabi, A. O. (2002): Efficacies of albendazole, levamisole and ivermectin against gasterointestinal nematodes of sheep in Nigeria. Bull. Animal Helth. Prod. Africa, 50 (1): 53-55.

Torina, A.; Dara, S.; Marrino, A.M.F.; Sparagano, O. A.; Vitale, F.; Reale, S. and Caracappa, S. (2004): Study of Gastrointestinal Nematodes in Sicilian Sheep and Goats. Ann. N.Y. Acad. Sci., 1026: 187–194.

Veneziano, V. (2004): Control of gastrointestinal strongyles in goats. , 46 (1-2): 245-50.

Yadav, C. L. (1997): Ovine premature births caused by *Haemoncus contortus*. Ind. Vet. J., 74: 983-984.

بعض الدراسات على الطفيليات الداخلية فى الأغنام فى محافظة بنى سويف

أجريت هذه الدراسة فى أربعة مراكز من محافظة بنى سويف و ذلك لمعرفة الأنواع المختلفة من الطفيليات الداخلية التى تصيب الأغنام فى الأعمار من ٢-٥ سنوات و تقدير معدل التحسن فى بعض قياسات الإنتاج بعد معالجتها بالنسبة لنوع كل إصابة طفيلية وأوضحت الدراسة أن الخيطيات المعوية و الدودة الكبدية هى الأكثر شيوعا بين الأغنام (٥٧,٤٤ % و ٤٨,٤٤ % على الترتيب) ثم ديدان البارمفيستومم (٣٨,٨٨ %) ، مونيزيا (٣٣,١١ %) و الأنواع المختلفة من الأيميريا (٢٩ %) و أخيرا ديدان التريكويوريس (٧%) و نتج عن عملية الاستزراع لبراز الحيوانات المصابة بالخيطيات المعوية ظهور يرقات الهيمونكس و هى الأعلى (٣٣,٧٥ %) ثم اوسترتاجيا (٣١,٥ %) و التريكواسترونجيلس (١١,٧٥ %) و كوبريا (١٤,٥ %) و نيماتوديرس (٨,٥ %). و فى العلاج ، استخدم ايفومك فى علاج الخيطيات و النيتروكسانيل فى علاج الدودة الكبدية و الاوكسيكلوزانيد فى علاج البارمفيستومم ، بعد العلاج حدث انخفاض كبير فى عدد البيض لكل جرام من البراز و صاحبه تحسن و زيادة فى الوزن (٥,٧ كجم / شهر) و زيادة معدل الولادات (٢٦,٧٧ %) و ذلك بعد ستة اشهر من العلاج، هذا وقد سجل أفضل زيادة فى الإنتاج بعد العلاج فى الحيوانات التى لم تكن مصابة بالدودة الكبدية و كذلك فى الحيوانات التى كان لها اقل عدد من البيض فى الجرام و أيضا فى الأعمار اقل من أربعة أعوام.